

Yale University

EliScholar – A Digital Platform for Scholarly Publishing at Yale

Yale School of Nursing Digital Theses

School of Nursing

January 2021

Decreasing 30-Day Readmission Rates In Patients With Heart Failure

Nancy Rizzuto
nrrn81@gmail.com

Follow this and additional works at: <https://elischolar.library.yale.edu/ysndt>

Recommended Citation

Rizzuto, Nancy, "Decreasing 30-Day Readmission Rates In Patients With Heart Failure" (2021). *Yale School of Nursing Digital Theses*. 1125.

<https://elischolar.library.yale.edu/ysndt/1125>

This Open Access Thesis is brought to you for free and open access by the School of Nursing at EliScholar – A Digital Platform for Scholarly Publishing at Yale. It has been accepted for inclusion in Yale School of Nursing Digital Theses by an authorized administrator of EliScholar – A Digital Platform for Scholarly Publishing at Yale. For more information, please contact elischolar@yale.edu.

DNP Project: Decreasing 30 Day Readmission Rates in Patients with Heart Failure

**Submitted to the Faculty
Yale University School of Nursing**

**In Partial Fulfillment
of the Requirements for the Degree
Doctor of Nursing Practice**

Nancy Rizzuto

May 2021

© 2021 by [Nancy Rizzuto]

All rights reserved.

Abstract: Heart Failure is one of the leading causes of hospital readmissions. Heart Failure affects approximately 6.2 million adults in the United States and costs the nation an estimated \$30.7 billion each year (Farmarkis, 2017). Prevalence is projected to increase 25% by 2030 (Savarese, 2017). Approximately 50% of patients who are discharged are readmitted within 6 months and 24% within 30 days (Desai & Stevenson, 2012). About half the population with heart failure dies within 5 years of diagnosis (CDC, 2016).

Despite advances in the treatment of heart failure, patient optimization remains a challenge for health care providers. The initiation of self-care is a multifaceted process which has been proven effective in reducing hospital readmission and mortality rates. Research supports optimization of care during hospitalization with definitive transition of care plans. A supportive environment, motivation, and adequate care programs implementing effective educational methodologies that build self-care skills should be recommended to health care providers and their families (Siabanni, 2013).

The current recommendations from the AHA GWTG HF are that patients receive education on early symptom recognition, diet, medications, and an individualized treatment plan before being discharged. A Pilot Program which enrolled 47 patients was implemented on the Telemetry unit. Patients were educated on their disease process, medications, diet, exercise, life-style modification, and early symptom recognition. Follow up phone calls were made within 48-72 hours of discharge and patients were seen by a Cardiologist within a week of discharge.

There was 16.6% decrease in 30 -day readmission rates for HF after the implementation of the Pilot program.

Keywords: heart failure, pilot program, self -care, transition of care, readmission rates

Acknowledgement

I want to express my utmost gratitude to my advisor, Dr. M. Tish Knobf, for her unwavering support and guidance. I am most appreciative of my colleague and project site director Greg Charles, MHA for his patience, assistance, and attention to detail in extracting the data.

Finally, I would like to thank my cohort 2021 for their friendship and support, the group me texts and campus get togethers.

“It is only with the heart that one can see rightly; what is essential is invisible to the eye.”

“The most beautiful things in the world cannot be seen or touched, they are felt with the heart.”

— **Antoine de Saint-Exupéry, The Little Prince**--

Dedication

To my parents, Domenica A. Corso - Guarino and the late Joseph J. Guarino, thank you for all the love, support and sacrifices that you have made through the years to help mold me into the woman I am today. Tanto amore. Diu ti binirici.

With love and gratitude to my husband Richard J. Rizzuto for his support, encouragement, and countless hours of proof reading. Meine Geliebte.

To my children Nicole, Mathew, Marc, and Catherine for their late-night tutorials, love, and support. You are my world!

“Optimism is the faith that leads to achievement H. Keller.”

Be the forever optimist... reach for the stars and never give up on your dreams...

Table of Contents

Abstract	4
Acknowledgement	5
Dedication	6
Table of Contents	7
Glossary	9
Chapter I	10
Introduction	10
Background	11
Problem Statement	12
Significance of Addressing the Problem	13
Chapter II	15
Review of Literature	15
Organizational Analysis	19
Theoretical Framework	24
Project Goals and Aims	26
Chapter III	27
Aims & Methods	27
Protection of Human Subjects	32
Timeline	32
The DNP Project and Leadership Immersion	34
Chapter IV: Results	35
Pre & Post Assessment	35
Project Evaluation	40
Chapter V: Summary	46
Summary Review of the Problem	46
Implications for Practice & Policy	49
Limitations	49
Conclusion	50
References	52

Appendices	57
A PRISMA Diagram	58
B Executive Summary	59
C Discharge Criteria	60
D Patient Counseling Checklist	61
E Gantt Chart	62
F Patient Call Back Sheet	63
G Patient Self Check Plan	64

Glossary

Term	Definition
CAD	Coronary Artery Disease: blockage of one or more arteries that supply blood to the heart, usually due to atherosclerosis (hardening of the arteries).
CDC	Center for Disease Control
CMS	Centers for Medicare/Medicaid Services
EF	Ejection Fraction the ratio of the volume of blood the heart empties during systole to the volume of blood in the heart at the end of diastole expressed as a percentage usually between 50 and 80 percent (Webster,2019).
Feasibility Study	Feasibility study is an analysis used in measuring the ability and a likelihood to complete a project successfully.
Health Literacy	Degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions.
Heart Failure	Heart Failure: a chronic progressive condition that affects the pumping power of your heart muscles that leads to a buildup of fluid in the lungs and surrounding body tissues.
HRRP	Hospital Readmissions Reduction Program is a Medicare value-based purchasing program that reduces payments to hospitals with excess readmissions. The program supports the national goal of improving healthcare for Americans by linking payment to the quality of hospital care (CMS.gov).
Ischemic Cardiomyopathy	Left Ventricular systolic dysfunction. In coronary artery disease, the arteries that supply blood to the heart muscle become narrowed. The left ventricle will likely become enlarged, dilated and weakened. This inhibits the heart's ability to properly pump blood, which can lead to heart failure (Briceno, 2016).
Mortality	Mortality refers to an individual or a larger group of people, regarding the total number of deaths within a population.

Chapter 1

Introduction

Heart failure is a disease that is considered a global health priority affecting approximately 36 million people (Farmarkis, 2017). There are approximately 5.7 million adults in the United States who have heart failure, which has serious health and fiscal consequences. Heart failure costs the nation an estimated \$30.7 billion each year (Farmarkis, 2017). Coronary artery disease is the primary cause of heart failure, accounting for 60% of the patient population. Other causes include hypertension, cardiomyopathy, and valvular heart disease (Komamura, 2013).

Heart failure occurs when the heart is unable to pump blood to maintain adequate tissue and organ perfusion. There are different types of heart failure: acute, chronic, left-sided, right sided, systolic, and diastolic. Acute heart failure occurs suddenly after an myocardial infarction (MI) or takotsubo (stress induced cardiomyopathy). In chronic heart failure, symptoms appear slowly overtime and gradually get worse. Left sided heart failure is the inability of the left ventricle to effectively pump blood causing a backup of fluid in the lungs. Right sided heart failure is ineffective pumping of the right ventricle causing systemic fluid retention (abdomen, legs, feet). In systolic heart failure there is left ventricular failure and cardiomegaly, essentially a “pumping problem”. There is an inability of the heart to contract to provide enough blood flow forward. The Ejection Fraction (EF) is less than 40%. In diastolic heart failure there is pulmonary congestion together with a normal or only slightly enlarged ventricle. Diastolic heart failure is a “filling problem” the left ventricle cannot relax normally, resulting in fluid back up into lungs. There is a preserved EF greater than 60%.

Managing heart failure is challenging to both the patient and the health care provider. Compliance with life-style changes, early recognition of symptoms, adherence to dietary restrictions and medications are some of the self-care strategies for improved outcomes. The lack of knowledge of HF patients, —especially regarding diet and salt restriction, —and misconceptions about HF and its symptoms leading to failure of understanding of the relationship between disease and symptoms, were prominent themes as barriers to self-care (Siabani,2013). Approximately 50% of patients who are discharged are readmitted within 6 months and 24% within 30 days (Desai &Stevenson, 2012). About half the population with heart failure dies within 5 years of diagnosis (CDC, 2016).

Background

Heart failure affects people regardless of age, gender, and race. There is an incremental increase in the incidence of heart failure with age. In the United States (U.S.) heart failure occurs in approximately 2% of people aged 40- 59 years, increasing to 5% between 60 to 69 years of age, and doubles to 10% in those over the age of 70. It is slightly more common in men (10%) than women (8%) (Farmer, 2016). African Americans are 1.5 times more likely to develop heart failure than Caucasians. Heart failure is an important driver of health inequity in the U.S.

Mortality rates vary depending upon socioeconomic factors. Minority patients have lower mortality rates (20%) than white patients (31%), although the readmission rates for minorities were higher than white patients (Durstensfeld, 2016). This is primarily due to poor health literacy and cost barriers in seeking specialized care providers. Black patients are more likely than white patients to seek care in emergency departments for exacerbation of heart failure

symptoms (Durstensfeld, 2016). The problem is not going away. Prevalence is projected to increase 25% by 2030 (Savarese, 2017).

Problem Statement

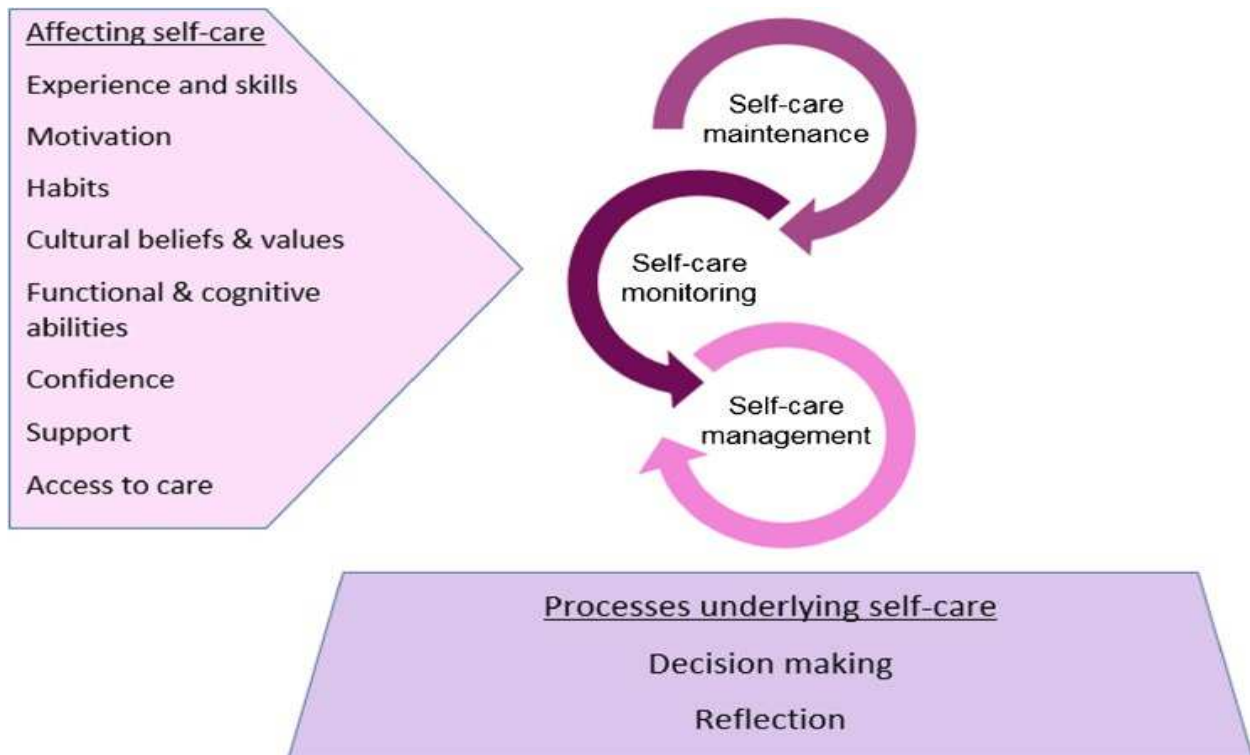
Despite advances in the treatment of heart failure, patient optimization remains a challenge for health care providers. Insufficient knowledge about heart failure, symptom recognition and ways of self-care along with hopelessness and psychological problems limits the patient's ability for effective self-care. In addition, poor health literacy of heart failure education, nonadherence to treatment plans, and a lack of access to care lead to increased hospital readmission. (Shakir et al 2018).

The Hospital Readmissions Reduction Program, targets hospital readmission within 30 days of discharge. The Centers for Medicare and Medicaid Services began assessing financial penalties based on risk-standardized 30- day readmission rates for heart failure (Shakir, 2018).

Significance of Addressing the Problem

Low health literacy and non-adherence to treatment plans result in high readmission and mortality rates. The success of self-care depends upon the willingness and cognition of the patient. Compliance with lifestyle changes, medication adherence and early recognition of symptoms improve health outcomes. The initiation of self-care is a multifaceted process which has been proven effective in reducing hospital readmission and mortality rates. Research supports optimization of care during hospitalization with definitive transition of care plans. A supportive environment, motivation, and adequate care programs implementing effective educational methodologies that build self-care skills should be recommended to health care providers and their families (Siabanni, 2013).

Factors affecting self-care and processes underlying self-care according to the middle-range theory of self-care and chronic illness (Jaarsma, 2017).



The middle-range theory of self-care of chronic illness can assist clinicians in their assessment of patients with heart failure and in identifying individual factors that hinder their engagement in self-care (Jaarsma, 2017). The success of self-care management depends upon the patient's cognition and willingness. In a feasibility study of a nurse-led heart failure education program, findings suggest that the education program improved self-care behaviors and decreased 30-day readmissions (Baptiste, 2016).

The Transitional Care Model is a nurse-led intervention used for adults that are at risk for poor outcomes. Utilization of the Transitional Care Model identifies patient's health care goals, develops a plan of care, and allows for continuity of care throughout the phases of the illness (Hirschman, 2015).

Chapter 2

Review of Literature

A literature search was conducted on studies involving HF transitional care interventions and Self-Care Strategies between 2012 and 2018 using Cardiosource Plus, Science Direct, Web of Science, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed and Cochrane Library databases. Appropriate keywords were identified related to self-care strategies, care management principles, hospitalization and treatment, and studies that measured HF readmissions. Database searches rendered 443 articles which were reviewed for relevance; 40 articles met the criteria for further review and 28 were included in this synthesis (see Appendix A). Articles that were chosen met the following criteria: published in the English language; focused on transition of care models; reduction in 30-day readmission rates; self-care strategies; and barriers to care. These articles included systematic reviews. Several of the studies highlighted the use of an advanced practice nurse (APN) as the manager and leader of the HF program, which, combined with other interventions, demonstrated positive effects in reducing hospital readmissions through at least 30 days after discharge. Most of the studies emphasized the implementation of a standardized patient heart failure education program focused on promoting self-care management. The remaining studies reviewed how to eliminate barriers and facilitate self-care strategies.

Reduction of readmissions and mortality required optimization of care during hospitalization. It is within this time that an assessment can be made to determine the patient's cognition, understanding of their illness, if there are any barriers to self-care, and physical and psychological needs. While hospitalized, the patient's care should be determined by current

evidence-based clinical guidelines for optimization of care. Utilizing a team-based approach to a definitive transition of care plan will be created based on the need's assessment.

A Transition of Care Plan: A transition in care is defined as the time when a patient transfer from a hospital to home or community (Garcia, 2017). Transition of care programs are designed to prevent hospital readmissions and include a substantial number of time-limited interventions that help establish continuity of care, avoid preventable poor outcomes, and ensure the safe and timely transfer of patients with complex chronic conditions from one level of care to another or from one type of setting to another. The transition of care should be a nurse-led coordination of the in-hospital intervention including members of the multidisciplinary HF program. There should be a systematic planning of discharge and transfer home based on in-person meetings with the in-hospital and community health care professionals in a discharge coordination session. This allows appropriate integrated intervention to be designed for each patient admitted with HF (roadmap). (Baptiste, 2016, Garcia, 2017, Jaarsma, 2017, Naylor, 2017).

Implementation of a Standardized Patient Heart Failure Education program:

Promoting Self-care Management

A worldwide survey has shown the need to improve self-care. Education on how to support a partner, family member or friend with heart failure is an important part of promoting self-care. New strategies for long-term monitoring and management of patients outside hospitals improve quality of life and survival rates while reducing the number of readmissions (Ponikowski, 2014). A major concern for nurses and program developers is to deliver the best practices for teaching self-management to people with chronic disease. The best strategies are programs that are

individualized and prolonged in duration to improve self-management. The best interventions for teaching-learning methods combined the use of direct contact options with technological devices. (Pinchera, 2017). The gold-standard of patient self-management in chronic heart failure can be defined as daily activities that maintain clinical stability (Toukhsati, 2015). Through this process patients monitor their symptoms and follow their medication, diet, and exercise plans. The American Heart Association has developed an app called HF Path which can be uploaded on the patient's phone. The app is a self-management tool that empowers heart failure patients to better manage and live with their condition. It helps the patient track their symptoms and weight and reminds them to take their medication regularly. The app also provides interactive courses to improve their quality of life. Patients can also connect with others like them through the group chat function or through the AHA/ASA Support network. The tool can also be accessed via the web at www.heart.org/hfpath.

Early symptom recognition such as shortness of breath, swelling of the ankles or legs, and a weight gain of more than two pounds in one day and subsequent seeking of immediate treatment is key to the success of self-care.

Self-management is dependent on a range of factors including social and personal influences in conjunction with healthcare systems and health professionals. The success of self-care management depends upon the patient's cognition and willingness. The goal is to enable and empower patients to be in control. Heart failure is a very debilitating disease. Patients feel as though they are losing their independence and their self-esteem decreases in meaningful ways. This makes it harder for compliance and adherence to life-style changes. A supportive and trusting relationship needs to be developed with the healthcare team. Patient support from family

and friends enhances patients' ability for self-care. (Toukhsati, 2015, Creber, 2016, Pinchera, 2018).

Eliminate Barriers and Facilitate Self-Care Strategies:

Insufficient knowledge about Heart Failure, poor health literacy, cultural beliefs, symptom recognition and ways of self-care along with hopelessness and psychological problems were some of the barriers to care. These barriers limited the patient's ability for effective self-care. Strategies to help overcome these barriers include motivational interviewing, assessing cultural beliefs, enhancing self-efficacy, and peer support. Motivational interviewing will increase the patient's motivation so that they feel empowered asking, listening, informing. The DARNCAT mnemonic is used for the interviewing process: Desire—Why do you want to make this change; Ability—How will you make this change; Reasons—What are the benefits to make this change; Need—How important is this change; Commitment—How will you do it; Activating—What are you ready to do; Taking Steps—What are you doing now to make yourself healthy.

A supportive environment from family, friends, nurses, and physicians along with motivation and adequate care programs that use effective educational methods to build self-care skills, should be recommended to health care providers and families. This will help facilitate self-care in terms of self-care confidence, adaptation with disease and reducing anxiety, adherence to treatment and food regimen, symptom management, positive outlook, and motivation to obtain information and care for own selves (Siabani, 2013). Clear communication between patients and providers is essential to establishing trust with accountability from a single provider. Disease severity and prognosis should be clearly described to better engage patients

and caregivers. Providers must explicitly explore barriers to successful care and offer pragmatic, patient-centered guidance on how these barriers may be overcome (Siabani, 2013, Sethares, 2014, Farmer, 2016, Segan, 2017).

Organizational Analysis:

Brookdale University Hospital Medical Center: In 1910, the residents of Brownsville decided to build a voluntary nonprofit community hospital. Members of the Jewish community wanted a hospital that served people of all races and creeds in a humanitarian manner. The mission and vision of the hospital is to provide quality cost-effective care, address the health care needs of the community, provide integrated health care systems to the community, promote, and facilitate preventative care, foster education, and research, treat everyone with respect and dignity, and focus on customer satisfaction and cultural awareness (About: Brookdale University, 2019). On April 11, 1921, the Brownsville and East New York Hospital opened with 75 beds. By 1930 the hospital expanded to 170 beds and was renamed Beth-El Hospital. The hospital kept expanding and by 1970 it was a 500- bed facility caring for the people of Brownsville and East New York. Once again, the name was changed to Brookdale Hospital Medical Center to reflect the status of a major health care provider. Through the years the hospital struggled financially. In efforts to stay open, administration decided to close beds and services offered to the community (About: Brookdale Univ, 2019). A plan to develop a health care system with two other failing institutions funded by the government is underway. The name has been changed to “One Brooklyn Health” which includes Brookdale, Interfaith and Kingsbrook Jewish Hospitals (see Appendix B).

Patient Population: Brownsville is a residential neighborhood located in eastern Brooklyn in New York City. It is comprised of 1.163-square-miles and has 58,300 residents (CDC, 2015). Brownsville underwent a major demographic change in the 1950s with an influx of African American, Caribbean, and Latino residents. Since then, it has consistently held one of the highest poverties and crime rates of any neighborhood in New York City. More than 54% of its children are growing up in households under the poverty line, and less than half of working-age adults have jobs. Approximately 50% of families in the community receive government income support (Temporary Assistance for Needy Families, Supplemental Security Income, and Medicaid). Gang related violence and crime is extremely high. Brookdale's Emergency Room encounters one of the highest incidences of puncture wounds in the State, including a gunshot wound victim every 36 hours (Community Health Needs Assessment, 2018).

Heart Failure Demographics: The National Average for 30- day readmission rates is 21.6%. Brookdale has a 26.5% rate.

Hospital Designations: Brookdale is a Level 1 Trauma Center, Designated Stroke & STEMI Center.

Administration: Changes in Senior leadership have been ongoing for the past three years. President & CEO Dominick Stanzione joined Brookdale in September of 2017, CMO David Rose, MD in 2016 and CFO Robert Palermo in the fall of 2018. Currently, the hospital does not have a COO. Khari Edwards, Vice President of External Affairs at Brookdale University Hospital and Medical Center, is also the hospital's political liaison. Mr. Edwards has participated in community development and led the charge in redefining the importance of health as a priority in the lives of Brookdale's clientele. As the Interim CNO, I am engaged and

committed to improving the quality of care and providing services that are needed to the community.

Funding/ Financial Status: Brookdale cares for all patients regardless of their financial/ insurance status. The Medical Center incurred excess (deficiency) of revenue and other support over expenses of \$21.7 million and (\$33.7) million, a working capital deficiency of \$102.2 million and \$134.5 million, and an unrestricted net deficit of \$229.6 million and \$256.8 million as of December 31, 2016. To assure adequate funding to meet operating needs, management works closely with the NYS Department of Health (DOH) and the Dormitory Authority of the State of New York (DASNY) to secure incremental funding, including continued discussions with the board of trustees, and community groups to help guide the Medical Center's future course.

Readiness for Change: The Organizational Readiness checklist is a tool for individuals who are involved in designing and leading an organization-wide change strategy. The purpose of the tool is to determine an organization's level of readiness to implement evidence-informed practice.

Organizational Readiness Checklist

Readiness Question	Assessment in Your Organization	Yes	No
Does the organization promote a culture of safety?	<p>Hospital culture focuses on a systems approach to error reduction.</p> <p>Each Department follows indicators which are reported to the monthly or quarterly QA/PI meetings. The Board of Trustees establishes priorities for quality improvement initiatives.</p> <p>An interdisciplinary team conducts a Root Cause Analysis (RCA) on Sentinel and Adverse Events.</p>	YES	
Why is change needed?	<p>Currently Brookdale does not have a Heart Failure Program.</p> <p>Readmission rates for heart failure are above NY State average</p>	YES	
Do organizational members understand why change is needed?	<p>Decrease readmission rates for heart failure patients</p> <p>To improve the quality of and access to care for heart failure patients.</p> <p>To promote Self-Care strategies</p>	YES	

Readiness Question	Assessment in Your Organization	Yes	No
Is there leadership support for this effort?	Leadership support has been assessed. Chief Nursing Officer Chief Medical Officer/Chairman of Medicine Director of Cardiology Director of Electrophysiology	YES	
What kinds of resources are needed?	A Multidisciplinary Team consisting of: Nurse Practitioners, Cardiologists, Case Managers, Dieticians.	YES	
	Commitments to provide those resources have been obtained or are forthcoming.		NO

Tool 1F: Organizational Readiness Checklist. Content last reviewed January 2013. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.ahrq.gov/professionals/systems/hospital/fallp toolkit/fallp tk-tool1f.html>

Based on the information provided, the organization is ready to change and implement evidence-based practice for quality improvement in Heart Failure patients. Due to the current financial situation of the hospital, we are utilizing the existing resources to develop this program.

Theoretical Framework

Patients who are discharged from the hospital at times are incapable of self-care. The Discharge interventions included discharge planning, patient education, self-management, post discharge phone calls, telemonitoring, and follow up care. The findings showed that when providing patients with a detailed plan of care, which supported a patient's, capacity for self-care, readmission rates were decreased (Naylor, 2017). Mary Naylor, PhD RN FAACN a leader in health care innovations, designed a transition of care model for older adults with chronic disease.

The Transitional Care Model focuses on improving outcomes and reducing hospital readmissions. The Transitional Care Model (TCM) is a nurse led intervention used for adults that are at risk for poor outcomes. The model identifies patient's health care goals, develops a plan of care, and allows for continuity of care throughout the phases of the illness. For the TCM model to be effective a trusting relationship must be developed between the clinician, the patient, and the family caregiver. Guided by individual patient goals and unique learning styles and preferences, the advanced practices nurses (APRNs) utilize multiple teaching strategies and tools including coaching, modeling, and the use of teach-back (Hirschman, 2015).

There are nine core components of this process:

1. **Screening:** Adults who are transitioning from the hospital to home and are at high risk for poor outcomes.
2. **Staffing:** APRNs who are primarily responsible for care management throughout the illness. APRNS provide patient-centered, comprehensive, holistic care that is

culturally sensitive to the individualized needs of the patients and their family.

(Hirschman, 2015)

3. **Maintaining Relationships:** Establishes and maintains a trusting relationship with the patients' and family caregivers involved in their care.
4. **Engaging Patients and Caregivers:** This will enable older adults to participate in the design and implementation of the plan of care aligned with their preferences, values, and goals.
5. **Assessing /Managing Risks and Symptoms:** Identifies and addresses patient priority risk factors and symptoms.
6. **Educating/Promoting Self- Management:** Encourages patient and family caregivers to recognize and react immediately to exacerbation of symptoms.
7. **Collaborating:** A coordination of care between patients and members of the care team.
8. **Promoting Continuity:** Promoting continuity prevents breakdowns in care from hospital to home by maintaining the same health care provider for these sites.
9. **Fostering Coordination:** Promotes communication and connections between health care and community-based practitioners.

This model is known to improve outcomes and reduce hospital readmission rates through self-care strategies which is the basis of my project. The TCM Model identifies patients' goals, designs a plan of care, and maintains continuity of care throughout each phase of the illness.

Project Goal

To reduce 30-day hospital readmissions for heart failure by implementing a comprehensive self-care program for patients and families admitted to Brookdale University Hospital and Medical Center that is based on recommendations from the Transitional Care Model.

Aims

1. Develop an evidence-based heart (TCM) failure patient and family program and structures to support its implementation.
2. Pilot the new program on the telemetry unit.
3. Evaluation Aim: Assess staff's adherence to the heart failure program. Evaluate trends in 30-day heart failure readmission rates pre- and post-implementation.

Chapter 3

Aims & Methods

Aim 1: Develop an evidence-based heart failure program and structures required to support its implementation. Brookdale University Hospital has recently partnered with AHA to help develop a HF program for the institution. This involved holding in-hospital biweekly meetings with the Chairman of Medicine/Chief Medical Officer, Chief Nursing Officer, Director of Nursing for Critical Care and Cardiologists to identify the needs of the program and delineate the roles and the responsibilities of the team members. Placing myself in the role of Program Director, and utilizing the existing staff, a HF team has been formed. The HF team consists of the Chairman of Medicine and Chief Medical Officer, Chief Nursing Officer, a Cardiologist, Nurse Manger of CCU/Telemetry, Staff Nurses, and APRNs. The purpose of the team was to develop a HF program to ensure best practices and reduce readmissions. My responsibilities as Program Director were initially defined as having team oversight, specifically monitoring of the program's progress. The Project used hospital data collected through the GWTG-HF quality improvement program. The data collected was focused on the patient's stage of illness, admitting diagnosis, prior admissions (if any), medication list, self-care strategies, and barriers to care. The in-hospital team met biweekly as well as monthly with the American Heart Association to review data and the overall progress of the program.

A HF education program developed by our HF team was implemented on the Telemetry Unit. The Education Program utilized patient education materials provided by the American Heart Association. Each patient received a "goodie bag" before discharge. The bag is a red tote with a vegetable heart insignia which contains a multi-dose pill box and an easy-to-follow HF

guide booklet. Patients who did not have scales at home were given one on discharge through case management.

The Hospital HF Team & Post-Acute Care Center (PAC) Participation:

Reviewing the medical record and current process of transitions in care allowed the team to identify any gaps in care, implement improvement strategies and bridge patient care from hospital to PAC centers. The HF team reviewed the process from discharge planning to outpatient follow up by accessing the electronic medical record. The ability to review patient records and run real-time reporting metrics, including benchmark data at the state and national level enabled the team to initiate and improve upon quality measures. I conducted a Pre-Intervention Survey: Assessment of Hospital Transitions of Care Processes which was sent to the AHA. This survey assessed HF strategies for patient's intra and post hospitalization. Data was also collected on HF admission and readmission rates. The data was reviewed by the HF team, and a plan was formulated regarding optimizing patient care.

Utilizing current resources, the AHA assisted the hospital HF team in consistently providing the latest evidence-based treatment to HF patients. This included consulting from AHA Quality Improvement Directors. The transitions of care performance reports included all patients registered in the data base. The reports provided patient care data, medications, follow up appointment (if any), and to where the patient was discharged.

The following measures were monitored and implemented by the HF team (Cardiologist, RN, and NP) in the hospital. The goal was to increase compliance to these evidence-based treatment guidelines and engage patients in their HF management:

1. ACEI/ARB or ARNi at discharge
2. Evidence-based specific beta blockers
3. Aldosterone antagonist at discharge for pts with HFrEF
4. Follow-up visit within 7 days or less
5. Referral to HF disease management, 60 minutes patient education, HF interactive workbook, or referral to outpatient cardiac rehabilitation

The Telemetry Unit Staff was trained on current Best Practices for Heart Failure by Nursing Education: 60 minutes patient education; HF interactive workbook; Referral to HF disease management; Referral to outpatient cardiac rehab and follow-up phone calls within 48 - 72 hours of discharge scheduled. Patients were taught at Bedside by their nurse. Patient Education started upon admission and was reinforced until discharge. Documentation was done in the EMR. A Standardized HF checklist/protocol/pathway/order sets was used to coordinate the care of HF patients upon admission, throughout the patient stay, at discharge, and throughout transition of care (See Appendix C, D). The discharge nurse ensured that the patient had an appointment for follow up and reviewed the discharge instructions. A post-discharge phone call was made by the AHN to the patient within 48–72 hours. A checklist was reviewed with the patient by the nurse at the time of the call and documented. Some of the issues addressed on the checklist were weight gain, medication availability, medication compliance, symptom review, dietary restrictions, and a follow up appointment.

There are apps specifically for heart failure patients that enable them to gain control of their symptoms, adhere to their treatment plan and enhance self-care.

The most recommended by the AHA is HF Path. This is a self-management tool for Heart Failure patients that teaches them to track and manage their symptoms, weight, and

medication regularly, while also educating them to improve their quality of life through engaging interactive courses. There is an opportunity to connect with other patients through the group chat function or through the AHA/ASA Support network. The tool can be accessed via the web at: www.heart.org/hfpath.

Aim 2: Pilot the new Heart Failure Program on the Telemetry Unit:

Developing a Team: I have chosen the Nurse Manager, Assistant Head Nurses and Nurse Educators to be the team leaders. The Telemetry staff and Case Manager were also a part of the team. The goal of this group was to ensure that the patients have a clear understanding of their disease process, access to care, and support upon discharge.

Team Meetings: Weekly meetings were held to discuss Core Measures, Patient Teaching, Methods used, Materials needed, Follow up, Referrals, and Evaluations.

Training of the staff on the Telemetry unit: Staff were trained on current Best Practices for Heart failure by Nursing Education.

Once the training of the staff was completed, the HF program began. This program engaged patients in their HF management. All patients that were admitted to the Telemetry Unit for Heart Failure were enrolled in the HF education program. The patients were taught at the bedside by their nurse. (See Appendix E) Patient education started upon admission and was reinforced throughout their stay. In addition to teaching about the disease process, medication and diet, part of the program focused on early recognition of warning signs and had a plan to address them. Many patients fail to recognize early symptoms which lead to exacerbations of the disease. For patients who have a smart phone, HF Path was uploaded onto their phone by the nurse upon admission. Once the app was uploaded on the patient's phone, the nurse instructed the patient on how to use it. By starting the teaching process early, the patient had time to familiarize

themselves with using the app and if assistance was needed the team was there to help. Patients went home with a HF guide booklet which included a daily diary, a multi-dose pill box and a scale. Once discharged, the patient had a follow-up appointment with the cardiologist within seven days or a cardiac rehab referral was made by the case manager. Follow up post discharge phone calls (within the first week) were done by the Nurse Manager and AHNs utilizing the post discharge checklist.

Aim 3: Evaluation Aim:

A review of the enrolled patient data enabled the HF team to improve clinical outcomes and assess if patients were performing self-care strategies through monthly quality metrics. Brookdale Hospital uses EPIC. Patients were able to utilize the system via a computer or their phone to upload their health data (weight, blood pressure) into the system. Evaluation of the efficacy of the program was done during follow up phone calls and outpatient visits with the patient through a brief post discharge questionnaire. During the phone call the caller did an assessment of the patient, went over the medications and dosage, diet, weight gain, follow up instructions, and appointments. The full questionnaire may be found in Appendix F.

Weekly reports of patients admitted with HF were sent to the HF team from EPIC. The patients were then put into our database by our Cardiovascular tech, a chart review was done to determine what teaching was done, where the patient was discharged to, medication review, follow up appointments and referrals. The chart review was done to ensure that all quality metrics have been met. If they had not been met, a review was be done by the HF team as to why the metrics were not met, as well as a follow up with the patient when warranted. Once the

patients were in our database, we were able to track hospital readmissions and the reason for the readmission.

Protection of Human Subjects

In utilizing the Yale University Institutional Review Boards Checklist IRB approval for this project is not needed. This DNP project is considered a Quality Improvement project.

Timeline

In July of 2019, data was collected using the electronic medical record for heart failure admissions and readmission rates to establish a baseline. The data was benchmarked against New York State and National averages. The results showed that Brookdale University Hospital had a readmission rate of 29% which was well above both the state (23%) and National average (21%), with 28.3% of patients readmitted within 30 days, 33.3% were readmitted within 60 days, and 40.2% were readmitted within 90 days. In August 2019, a meeting was set up with senior leadership to discuss the results and to get approval to form a heart failure task force.

September – November 2019, an in-hospital HF group was formed utilizing existing staff. The team consists of the Chief Medical Officer, the Cardiology physicians, Cardiology APRNs, the CCU/Telemetry Nurse Manger, the Director of Nursing, Case Managers, Assistant Head Nurses on Telemetry, and the lead Cardiovascular Technician of the Cardiac Catheterization lab.

In November 2019, a Pre-Intervention Survey evaluating the current transition of care process was done. The results showed: Referral to HF disease management, 60 minutes patient education, HF interactive workbook, or referral to outpatient cardiac rehab (11%), ACEI/ARB or

ARNi at discharge (61%), Post-discharge appointment for HF patients (11%), Follow-up visit or contact within 48 -72 hours of discharge scheduled (21%).

January – March 2020

- Performance measure data review, presented to senior leadership

June -August 2020

- Project Development: In -Hospital Patient Teaching: Self-Care Strategies, TOC,
- Pilot on Telemetry (once project is approved)
- Survey to evaluate refinements in transitions of care process

September -December 2020

- Performance measure data review
- Training of Staff on Telemetry Unit
- Implement changes if needed based on the survey and data review
- Best practice sharing, case studies, and barrier discussion

January – March 2021

- Post-Intervention Survey to evaluate refinements in transitions of care process
- Performance measure data review
- Best practice sharing, case studies, and barrier discussion
- Develop plans for post-Project research, model for other regions, and sustainability of initiatives.

The DNP Project and Leadership Immersion

Once I received approval for my project, I worked with my advisor, Dr. Tish Knobf, as the immersion mentor. The external team was the Brookdale University Hospital HF team and the American Heart Association Steering Committee. The project immersion took place at Brookdale University Hospital in Brownsville, Brooklyn initially on the Telemetry unit and then on the Med/Surg floors.

Chapter IV

Results

Aim 1

Develop an evidence-based heart failure program and structures required to support its implementation.

Aim 1 utilized the AHA GWTG for HF and recommendations from the Transitional Care Model. The model identified patient’s health care goals, enabled caregivers to develop a plan of care, and foster continuity of care after discharge. A pre implementation survey was conducted to assess the institutional needs and develop an evidence – based HF program. The survey focused on quality metrics, heart failure initiatives and resources.

Table1. The pre -implementation survey was done to provide “baseline” data and assess the needs of the institution. The focus is on communication, standards, and education.

	YES	NO
Does your hospital organize a multi-disciplinary quality improvement committee to review and monitor HF quality of care, including transitions of care components?		No
Does your hospital have a designated staff member or team responsible for coordinating care transitions for HF patients?		No
Does your hospital have a process to update HF care based on Clinical Practice Guidelines (CPG)?		No
Does your hospital have a process for tracking and reviewing all HF readmissions?	Yes	
Does your hospital use a standardized HF checklist/protocol/pathway/order sets to coordinate care of HF patients on admission, throughout the patient stay, discharge, and transition of care?		No
Does your hospital have a designated staff member(s) responsible for communicating transfer of care?		No
Does your hospital utilize a “Teach-Back” method when educating HF patients and/or caregiver?		No
Does your hospital provide a standard method/tool of HF education to patients and/or caregiver?		No

A team was built by utilizing current resources within the institution. The team consisted of Nurse Educators, Assistant Head Nurses, Staff Nurses, a Cardiovascular Technician, a Cardiologist, Nursing Director and Case Managers. Team meetings were held multiple times during the week to discuss delineation of roles, best practices, the training program, and the implementation plan. Once there was a mutual agreement, the project began. The Team began the PDSA cycle and focused on standardization of HF initiatives (Figure 2). Data were collected using the EMR by the Cardiovascular Technician. The data collected included patient demographics, diagnosis, medications, treatment plans and nursing documentation. The data were presented to the HF team where a plan was formulated to address the gaps in patient care. The goal was to increase adherence to these evidence-based treatment guidelines and engage patients in their HF management.

The Cardiology and Nursing team worked on developing a standardized HF checklist/protocol/pathway with order sets to coordinate care of HF patients on admission, throughout the patient stay, discharge, and transition of care.

A HF Education plan was developed by the Nursing team utilizing current best practices and guidelines based on recommendations from the ACC (American College of Cardiology), AHA (American Heart Association) HFSA (Heart Failure Society of America). A HF necessity bag was created for patients to take home with them. This bag included a multi-dose pill box and an easy-to-follow HF guide booklet. Patients were educated on the contents of the bag by the nursing staff using the “teach back” method.

The transition of care was coordinated by the Nursing and Case management team. Multidisciplinary rounds were held each morning to ensure proper coordination of care. A needs assessment was done on all patients so that anticipated services post discharge were provided (Visiting nurse, Physical Therapy, devices, etc.). Patients who were to be discharged were given a follow up appointment with a cardiologist and a prescription for HF related medications. If needed, medications were provided by the in-house pharmacy and given to the patient before discharge. The nursing staff continually reviewed the plan of care with the patients and made changes, as necessary.

RAMP PDSA CYCLE

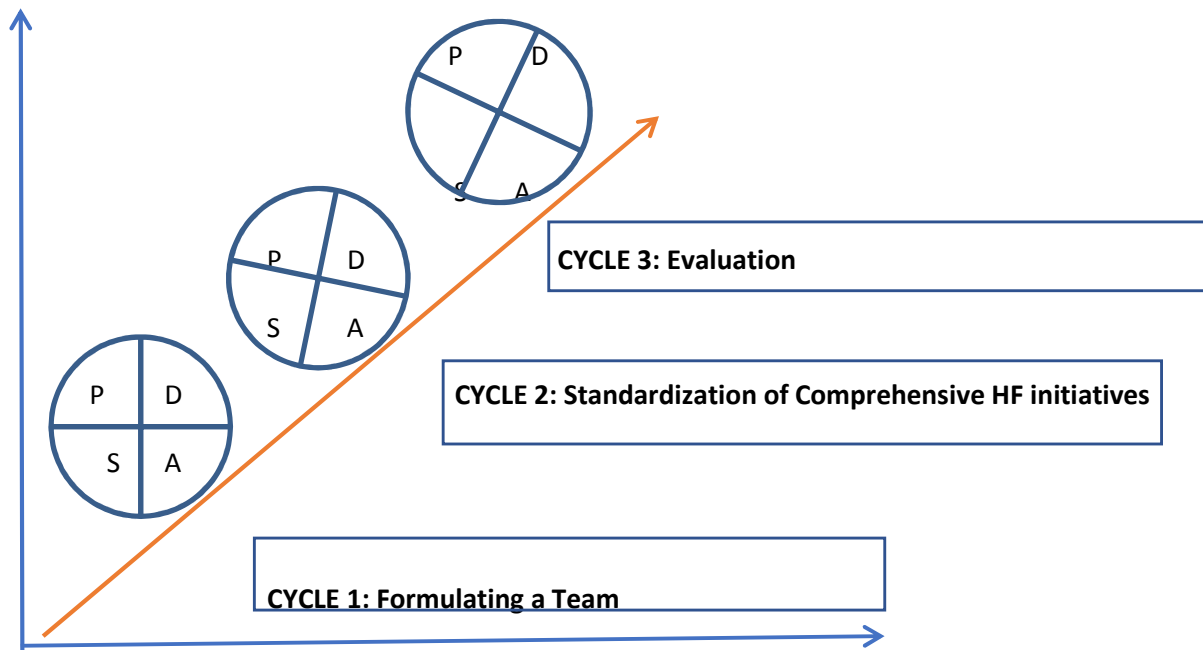


Fig.2. Cycle 1: Forming a multidisciplinary team and delineating roles. **Cycle 2:** Develop EB Teaching program, clinical pathways, HF checklist, and Nurse Callback program. **Cycle 3:** Evaluation of QI metrics: Patient Education, Nurse Callback Program, Medication Reconciliation, F/u apt, readmission rates.

Aim 2

Pilot the new Heart Failure Program on the Telemetry Unit

The current recommendations from the AHA GWTG HF are that patients receive education on early symptom recognition, diet, medications, and an individualized treatment plan before being discharged. Discharge medications need to include an ACE, ARB, or ARNi. Patients also were required to have an appointment with a cardiologist within seven days and followed by nursing with a post discharge phone call within 48 to 72 hours. Pre implementation of the Pilot Program, the above recommendations were not universally or consistently followed.

The Department of Nursing education trained the nursing staff on the telemetry unit. There were seven nurses who participated in the program including the Assistant Head Nurses. The initial training was done in two group sessions where a PowerPoint presentation and handouts were given to each nurse. During the group training session, the nurses were paired and demonstrated patient teaching. The initial session was four hours followed by three eight-hour training days on the unit with direct observation from the Nurse Educators and Director of Nursing.

Utilizing the “teach back” method, a total of 47 patients were taught at bedside about their disease process, early symptom recognition, self-care strategies, medication management, nutrition, life-style modification and were given a follow-up plan. Patient teaching was provided daily from admission until discharge. The teach back sessions focused on the patient’s level of understanding which allowed the nurse to build on individual’s baseline knowledge (Howie-Esquivel, 2015). After patients were taught, they were given a tote bag which contained

a multi-dose pill box and an easy-to-follow HF guide booklet. The program also offered patients to take their medications provided by the hospital's onsite pharmacy (the meds to bed program) home with them. Scales were ordered through case management for those who needed them to monitor their daily weight. For patients who were able to navigate a smart phone with ease, the HF Path app was uploaded by their nurse. This app was designed by the AHA to help heart failure patients' better control their condition by managing symptoms, tracking medications, and maintaining a healthier lifestyle. Empowering patients with self-care strategies resulted in a sense of achievement, rather than a feeling of helplessness.

Follow up appointments within seven days with a cardiologist were given to the patient upon discharge. If transportation was needed, case management made the arrangements. The nurse call back program was initiated for patients to be called within 48-72 hours after discharge.

The pilot program enrolled 47 patients which included their demographical data: age, gender, race, classification of HF. The team obtained weekly reports from the EMR and did chart reviews to see if the quality metrics were achieved. The review included documentation of HF education, follow up appointments and whether the patient was discharged on HF related medications. The nurse call back log was reviewed to determine how many patients were called and contacted, and if there were any issues or concerns expressed by the patients. Follow up appointments were monitored by the Cardiology team. Patients who did not keep their appointments were called to determine the cause. Evaluation of the pilot program resulted in successful implementation with the recommendations (Table 2)

Table 2. Evaluation of Pilot Program Components

<i>Educated at Bedside w/ Teach Back</i>	<i>46 (98%)</i>
<i>Follow up call w/in 48 -72 hours</i>	<i>46 (98%)</i>
<i>Discharged on ACE, ARB, or ARNi</i>	<i>39 (83%)</i>
<i>Scheduled for Follow -up w/ Cardiologist</i>	<i>39 (83%)</i>
<i>Showed up</i>	<i>32 (82%)</i>

With the training and commitment of the nursing staff to the pilot program, there was substantial improvement in meeting the recommendations after implementation (Figure 3).

The readmission rate for HF patients within the institution was 28.6% before the implementation of the Pilot Program. The current recommendations from the AHA GWTG HF are that patients receive education on early symptom recognition, diet, medications, and an individualized treatment plan before being discharged. Discharge medications needed to include an ACE, ARB or ARNi. Patients also were required to have an appointment with a Cardiologist within seven days and followed by nursing with a post discharge phone call within 48 to 72 hours. Pre-implementation of the Pilot Program, the above measures were not met which attributed to the high readmission rate.

Figure 3. Pre & Post Implementation of the Pilot Nursing HF Program

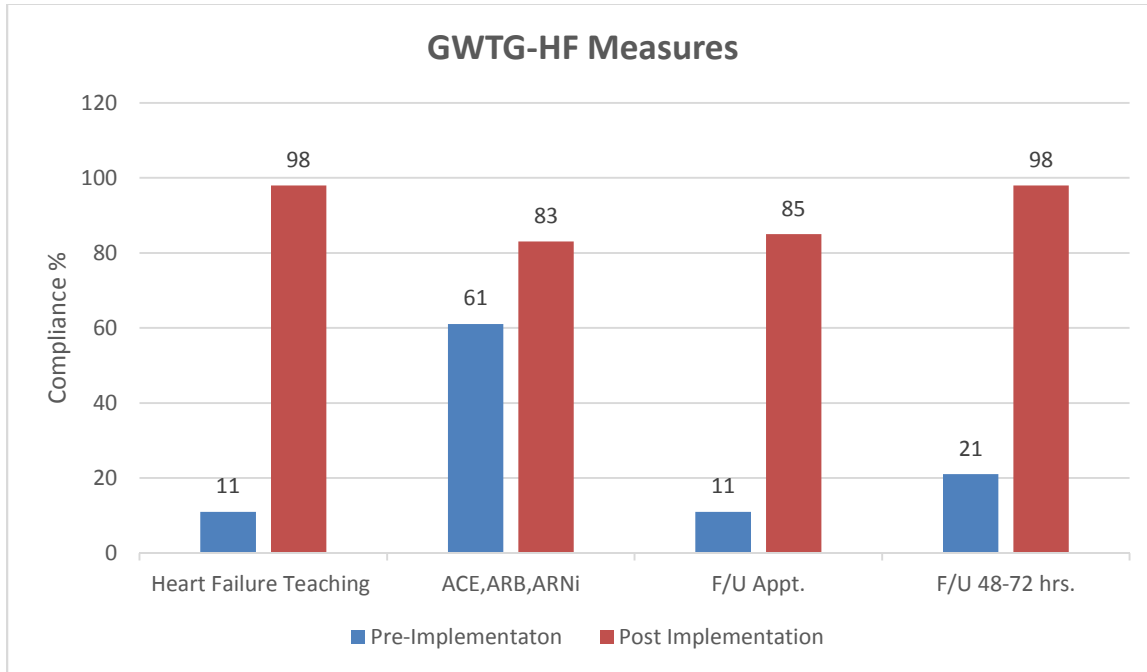


Table 3. Demographics of Patients enrolled in Pilot Program: Age, Gender, Race, HF classification

Age	Total
<i>min, max</i>	48,90
<i>mean age, (SD) σ</i>	60, SD 10.9
Sex	Total
N	47
Male	26 (55%)
Female	21 (45%)
Race	Total
	N (%)
Black	37 (78.87%)
Hispanic	9 (19.1%)
White	1 (2.1%)
Type of Heart Failure	Total
Count, N	47
Biventricular	4 (8.5%)
Diastolic	7 (15.09%)
Systolic	36 (76.5%)

Aim 3

There is a Decrease in the 30-Day Readmission Rate for HF after Implementation of the Pilot Program.

The National Average for HF readmissions is 21% and New York State average is 23%. Prior to starting the Pilot Program, the hospital 30-day readmission rates for this institution were 28.6%, exceeding the national and state rates.

After the Pilot Program, there was a drop in the 30-Day readmission rate of 16.6%. Of the 47 patients in the Pilot Program, patients readmitted resulted in a 12% 30-Day readmission rate. Demographic characteristics associated with re-admission included age (62 years-77 years), sex and ethnicity, specifically – four readmissions were men and of those two, two were Hispanic (both with Acute Decompensated Systolic HF), two were Black Caribbean (one new onset Systolic HF, one BIV HF). The two women readmitted were Black Caribbean (58 years – 62 years) both diagnosed with new onset Acute Systolic HF.

The six patients who were readmitted had exacerbation of symptoms due to nonadherence to their medications and diet. A common theme was not taking or skipping a diuretic dose. Patients were reeducated on the importance of taking their medications and the specific reason for each medication. They were also taught about modifying the time that a diuretic could be taken to accommodate their schedule. Diet plans were not adhered to due to cultural cooking styles, taste preference and expense. Dietary consultants were called for all patients admitted. Counseling on modification and substitution was reinforced by the nursing team.

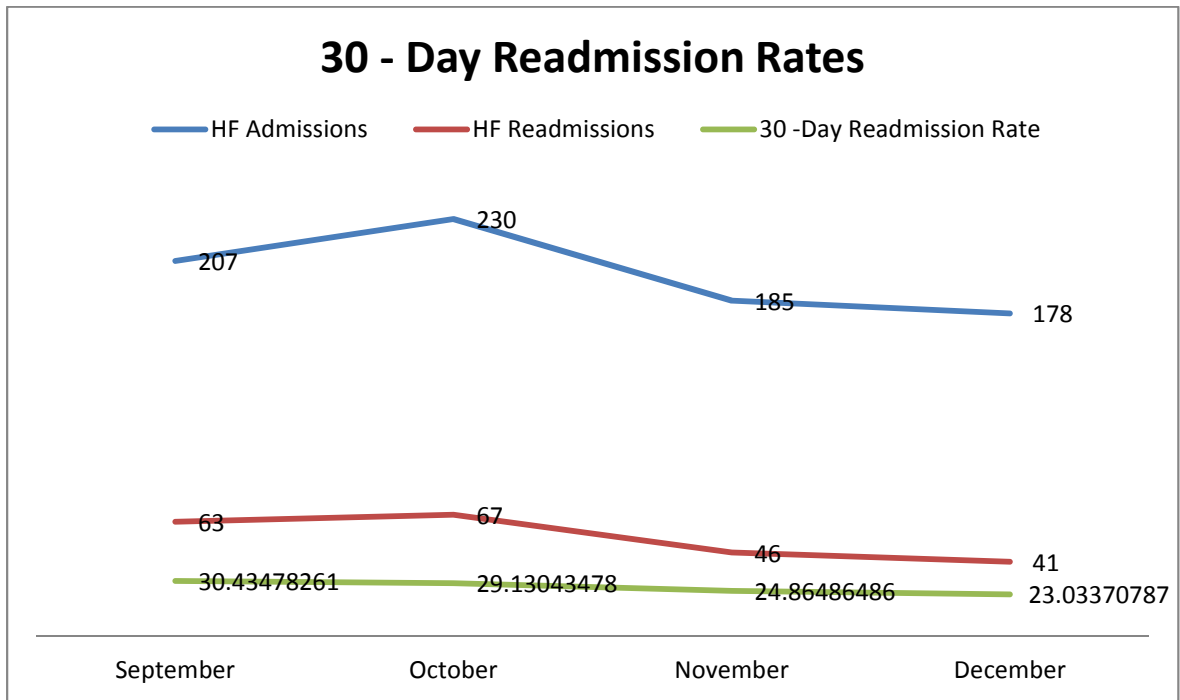
During the nurse call back program, nurses were able to address patients' questions and concerns, reinforce treatment plans, medication adherence and dietary restrictions. The nursing team provided emotional support and encouragement to patients during the call which reflected positively on the outcomes.

Of the 39 (82%) patients who had a follow up appointment with a Cardiologist post discharge; 32 showed up for their appointment. Patients were assessed for changes in health status and their understanding of the treatment plan. Additional patient education was provided on medication, diet, exercise, weight monitoring and recognition of worsening symptoms.

Of the 32 patients seen, there was a 99% compliance with treatment plans and medication adherence. There was no exacerbation of symptoms and no need for readmission to the hospital.

In summary, adherence to treatment plans along with follow up phone calls and outpatient visits within a week of discharge showed a decrease in the thirty-day readmission rate for patients with HF by 16 % (Figure 4).

Figure 4. Total amount of HF hospital admissions and 30-day readmissions over a four-month period.



Chapter V

Summary of the Problem

Heart failure affects people regardless of age, gender, and race. There is an incremental increase in the incidence of heart failure with age. In the United States (U.S.) heart failure occurs in approximately 2% of people aged 40- 59 years, increasing to 5% between 60 to 69 years of age, and doubles to 10% in those over the age of 70 (Farmakis,2017). Despite advances in treatment, Heart Failure remains a challenge for health care providers. Non- adherence to treatment plans, lack of education and access to care were the major causes of poor outcomes in our patient population. The goal of HF care is to manage symptoms in the outpatient setting to prevent HF hospitalizations which have a direct correlation with increased morbidity and mortality (Howie-Esquivel, 2015).

Table 4. Shows the total number of admitted HF patients, the 30-day readmission rate benchmarked against the National and NY state average for 2019.

YEAR	CASES	ALOS	READMISSION RATES	NATIONAL READMISSION RATES	NY STATE AVERAGE READMISSION RATES
2019	2,783	5.23 days	28.6%	21%	23%

Discussion

Patients were educated on their disease process, medications, diet, exercise, life-style modification, and early symptom recognition. Follow-up phone calls by the nurse gave the patient a feeling of support and answered many of their concerns while at home. Follow-up appointments made before discharge allowed for better access to care. Before the implementation of the Pilot Program, patients often stated that they would go to the Emergency

Room because they could not get an appointment and/or did not have a physician with whom to follow up. Having continuity of care and better communication with our patients helped build a trusting relationship with them. Providing the patient with better access to care no longer gave them the sense of abandonment and despair. They now have a team whom they can rely on and trust.

“Studies suggest that 25% to 50% of post discharge adverse events resulting in readmissions are potentially preventable or ameliorable, emphasizing a need for a multidisciplinary approach, patient and family engagement, improving transitions of care, and the post discharge period to keep patients well” (Maoyedi,2017).

There were 47 patients enrolled in the pilot program, forty-six patients participated in the educational plan, thirty-nine patients received a follow up appointment with a cardiologist; thirty- two patients showed up for their appointment, and 47 patients were called within forty - eight to seventy-two hours; 46 were able to be reached. Early follow-up visits with a cardiologist or PCP within seven days of discharge after an HF hospitalization have also been shown to help reduce the 30-day readmission rate (Nair, 2020). For the patients who did not show up to their appointment, follow up phone calls were made; four patients had transportation issues, two patients did not want to travel in inclement weather, one patient felt that they were much better and did not need to come to see the doctor.

The Hospital Readmissions Reduction Program (HRRP) is a Medicare value-based purchasing program that encourages hospitals to improve care coordination to reduce readmissions. Beginning in 2012, the HRRP assessed penalties based on a hospitals’

performance. CMS calculates the payment reduction and component results for each hospital (Upadhyay, 2019).

The average cost per HF admission is approximately \$15,000 per patient. The average hospital penalty ranges from 2-3%. Having high readmission rates places an added financial burden on the institution.

Patients who were optimized during their hospital stay and given concise education and treatment plans were less likely to be readmitted within 30 days. Support from the Healthcare team improved patient's knowledge of the disease, adherence to treatment and dietary plans, symptom management, and motivation.

A Quality Improvement project Nair and colleagues (2020) aimed at reducing all-cause 30-day hospital readmissions for patients with HF resulted in a 28% improvement of patients who had a follow –up appointment scheduled within two weeks of discharge compared to 2017, and a 19% improvement for patients who kept their follow-up appointments. The 30-day readmission rate of CHF patients was reduced in half after the implementation of their project, with a 14% readmission rate for the patients post QI implementation compared to 28% in 2017” (Nair, 2020), which was very consistent with the findings of our pilot program.

Implications for Practice and Policy

As a result of this pilot, with a decrease of 16.6% in the 30-Day readmission rates there is sufficient evidence to consider implementing this program throughout the hospital. There are two other medical floors that admit HF patients in the institution. The Nurse Managers, Assistant Head Nurses and staff members on those units will be trained by the Nursing Education Department. The training of the staff will take place in the classroom and on the unit for direct observation. Once the staff have been trained the program can be implemented.

The 30 - Day readmission rates will continue to be monitored monthly. The EPIC team sends weekly reports on HF admissions and monthly for readmissions to the HF team. The HF team will track the process and adherence to the program by the nursing staff and patients by performing monthly chart reviews from the EMR.

Limitations

The progression of the project did not go as planned due to the COVID pandemic. Lack of staffing and resources was a significant limitation. Some of the Team Members contracted the virus and were out for weeks at a time. Despite these barriers, once everyone returned to work, the team worked in collaboration and the project was successfully implemented.

The medical institution is known to have many divisions that are resistant to change and do not always adhere to best practices. The realities of this delayed the pace of the implementation process with Case Management as creating unique challenges. Not upholding their responsibilities in the TOC for our patients resulted in delays in discharge and follow-up

care for the HF patient. A concurrent change in leadership resulted in redefinition of individual roles and responsibilities inside the department.

Nursing documentation was also a challenge. The need to have specific documentation for HF patients inputted into the EMR was dramatically curtailed by the overall integration of the EMR into the One Brooklyn Health consortium of three stand-alone hospitals. Unfortunately, it took much longer than expected and there are a few documents that are still being done on paper (Nurse Call back questionnaire).

Patients came from a low socioeconomic background. Affording better nutritional choices was not always easy for them. Social workers became involved to help patients receive financial assistance and access to food banks.

Conclusion

Research has shown that hospitals in communities with substandard resources apart from financial and clinical restraints have higher 30-day readmission rates (Ziaieian, 2016.) In this patient population, health disparities were significant due to socioeconomic factors. The lack of resources included unaffordability of healthy food choices, lack of education about their disease process, and access to care.

The implementation of an Evidence Based HF program demonstrated improvement in self-care when patients were provided adequate education and resources. Patients understood the importance of early symptom recognition, life - style modification, medication and treatment plan adherence and keeping of follow up appointments.

Prior to the implementation of the Pilot Program, the 30-day readmission rate was a direct correlation to the lack of initiatives and resources for HF. Collaboration within the team and direct communication were key factors in providing optimal patient care, better clinical outcomes, and improvement in quality of life.

Changes made to the inpatient care processes, discharge processes, and post discharge follow-up proved beneficial to patient outcomes. The multidisciplinary team approach reduced gaps in care, provided better coordination and transition of care.

References

- Albert, N., Barnason, S., Deswal, A., Hernandez, A., Kociol, R., Lee, E., Paul, S., Ryna, C., White-Williams, C. (2015). Transitions of care in heart failure. *Circulation*, 384-409. <https://doi.org/10.1161/HHF.0000000000000006>
- Baptiste, D. L., Davidson, P., Paris, L. G., Becker, K., Magloire, T., & Taylor, L. A. (2016). Feasibility study of a nurse-led heart failure education program. *Contemporary Nurse*, 52, 499-510. doi: 10.1080/10376178.2016.1229577
- Briceno N., Schuster A., Lumley M., et al (2016). Ischaemic cardiomyopathy: pathophysiology, assessment and the role of revascularization. *Heart*, 102, 397-406.
- Butler, Javed., A. K. (2012). Hospital strategies to reduce heart failure readmissions. *Journal of the American College of Cardiology*, 60, 615-617. doi: 10.1016/j.jacc.2012.03.066
- Creber, R.M., Patey, M., Lee, C., Kuan, A., Jurgens, C., Riegel, B., (2015). Motivational Interviewing to improve self-care for patients with chronic heart failure: MITI-HF Randomized controlled trial. *Patient education and counseling*, 99, 256-264. doi:10.1016/j.pec.2015.08.03.
- Desai, A., Stevenson, L. (2012). Rehospitalization for heart failure: Predict or prevent? *Circulation* 126, 501-506. DOI: 10.1161/CIRCULATIONAHA.112.125435
- Farmakis, D., Papingiotis, G., Parisis, J. (2017). Acute heart failure: Epidemiology, and socioeconomic burden. *Journal of Continuing Cardiology Education*, 3, 88-92. doi.org/10.1002/cce2.61

- Farmer, S. A., Magasi, S., Block, P., Whelen, M. J., Hansen, L. O., Bonow, R. O., Grady, K. L. (2016). Patient, caregiver, and physician work in heart failure disease management: A qualitative study of issues that undermine wellness. *Mayo Clinic Proceedings, 91*, 1056-1065. doi: 10.1016/j.mayocp.2016.05.016
- Garcia, C. (2017). A literature review of heart failure transitional care interventions. *American Journal of Accountable Care 5*, 21-25
- Jaarsma, T., Cameron, J., Riegel, B., & Stromberg, A. (2017). Factors Related to Self-Care in Heart Failure Patients According to the Middle-Range Theory of Self-Care of Chronic Illness: a Literature Update. *Current heart failure reports, 14*, 71-77.
- Hirschman, K., Shaid, E., McCauley, K., Pauley, M., Naylor, M. (2015). Continuity of care: The transitional care model. *OJIN: The Online Journal of Issues in Nursing, 20*, 1-15.
- Howie-Esquivel, J., Carroll, M., Brinker, E., Kao, H., Pantilat, S., Rago, K., & De Marco, T. (2015). A Strategy to Reduce Heart Failure Readmissions and Inpatient Costs. *Cardiology research, 6* (1), 201–208. <https://doi.org/10.14740/cr384w>
- Inamdar, A.I. (2016) Heart failure: Diagnosis, management and utilization. *Journal of Clinical Medicine. 62*, 1-28
- Komamura, K. (2013). Similarities and Differences between the Pathogenesis and Pathophysiology of Diastolic and Systolic Heart Failure. *Cardiology research and practice, 2013*. 1-6
- Kwan, G., Kwong, L., Yhong, Y., Khema, A., Huang, G., Whalen, D., Phillipides, G., (2018). A simplified post-discharge telephone intervention to reduce hospital readmission for patients with cardiovascular disease. *Circulation: Cardiovascular Quality and Outcomes, 6*:A360

- Leppin, A. L., Gionfriddo, M. R., Kessler, M., Brito, J. P., Mair, F. S., Gallacher, K., Wang, Z., Erwin, P. J., Sylvester, T., Boehmer, K., Ting, H., Murad, M. H., Shippee, N. D., Montori, V. M. (2014). Preventing 30-day hospital readmissions: a systematic review and meta-analysis of randomized trials. *JAMA internal medicine*, *174*, 1095-107
- Li, J., Brock, J., Jack, B., Mittman, B., Naylor, M., Sorra, J., Mays, G., Williams, M. V., Project ACHIEVE Team (2016). Project ACHIEVE - using implementation research to guide the evaluation of transitional care effectiveness. *BMC health services research*, *16*, 70. doi:10.1186/s12913-016-1312-y
- Nair, Raunak et al. "Reducing All-cause 30-day Hospital Readmissions for Patients Presenting with Acute Heart Failure Exacerbations: A Quality Improvement Initiative." *Cureus* vol. 12,3 e7420. 25 Mar. 2020, doi:10.7759/cureus.7420
- Naylor, M.D., Shaid, E.C., Carpenter, D., Gass, B., Levine, C., Li, J., Williams, M.V. (2017). Components of comprehensive and effective transitional care. *Journal of the American Geriatrics Society*, published online 4/3/2017, PMID: 28369722
- Pinchera, B., Dellolacono, D., & Lawless, C. A. (2018). Best practices for patient self-management implications for nurse educators, patient educators, and program developers. *Journal of Continuing Education in Nursing*, *49*, 432-440. doi: 10.3928/00220124-20180813-09.
- Ponikowski, P. (2014). Heart failure: preventing disease and death worldwide. *ESC Heart Scally, C., et al. (2018). Persistent long term structural functional and metabolic changes after stress-induced (takotsubo) cardiomyopathy. Circulation*, *137*, 1039-1048.

Regalbuto, R., Maurer, M. S., Chapel, D., Mendez, J., & Shaffer, J. A. (2014). Joint Commission important for preventing readmissions? *Journal of cardiac failure, 20(9)*, 641–649.

Savarese, G., & Lund, L. H. (2017). Global Public Health Burden of Heart Failure. *Cardiac failure review, 3*, 7-11.

Segan, L., Nanayakkara, S., Mak, V., Kaye, D. (2017). Patient perspectives of barriers to self-care strategies in managing heart failure. *Heart & Lung Circulation. 2017, S142*

Segan, L., Nanayakkara, S., Mak, V., Kaye, D. (2018). Enhancing self-care strategies in heart failure through patient-reported outcome measures. *Journal of Internal Medicine (2018)* 995-998.

Sethares, Kristen A., Flimlin, Heather E., Elliott, Kathleen (2014). Perceived benefits and barriers heart failure self-care during and after hospitalization. *Home Healthcare Nurse: September 2014.*, 482-488.

Shakir, M., & Wasfy, J. H. (2018). Heart failure and readmissions: Research in the public eye. *American Heart Journal, 203*, 1-3. doi: 10.1016/j.ahj.2018.05.012

Siobani, S.D. (2013), Barriers and facilitators to self-care in chronic heart failure: a meta-synthesis of qualitative studies. *Springer Failure, 4 – 25*.

Thompson, D., Ski, C., Clark, A. (2018). Transitional care interventions for heart failure: What are the mechanisms? *The American Journal of Medicine, 278-280*.

<https://doi.org/10.1016/j.amjmed.2018.09.028>

- Toukhsati, S., Driscoll, A., Hare, D. (2015). Patient self-management in chronic heart failure- establishing concordance between guidelines and practice. *Cardiac Failure Review* 2015. 128-131.
- Upadhyay, S., Stephenson, A. L., & Smith, D. G. (2019). Readmission Rates and Their Impact on Hospital Financial Performance: A Study of Washington Hospitals. *Inquiry : a journal of medical care organization, provision and financing*, 56, 46908019860386
- Yancy CW, Jessup M, Bozkurt B, et al. (2013). 2013 ACCF/AHA guideline for the management of heart failure: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *Circulation* 128, 240–327.
- Ziaieian, B., & Fonarow, G. C. (2016). The Prevention of Hospital Readmissions in Heart Failure. *Progress in cardiovascular diseases*, 58(4), 379–385.

Appendices

Appendix A



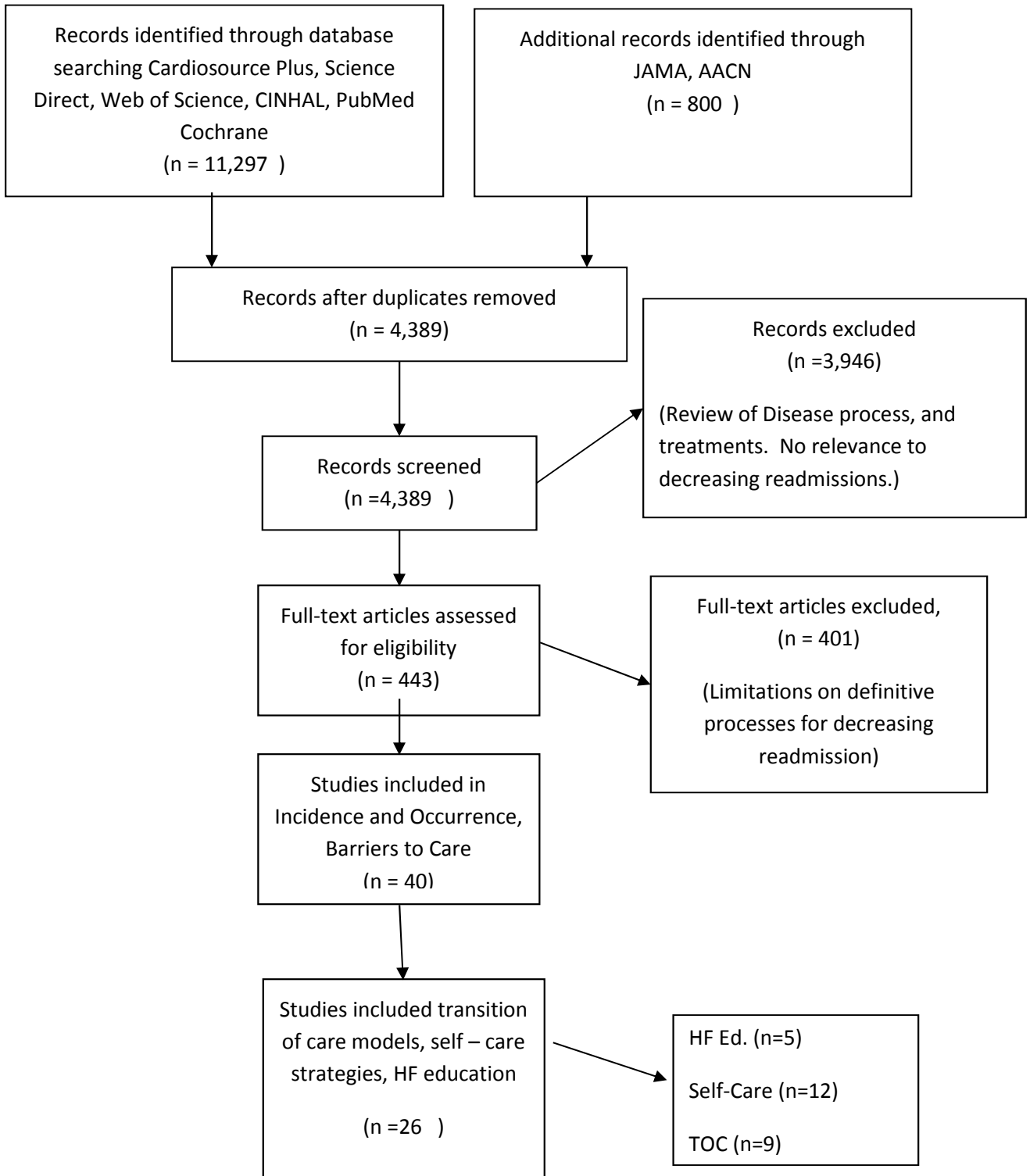
PRISMA Flow Diagram

Identification

Screening

Eligibility

Included



Appendix B

Executive Summary

One Brooklyn Health is an integrated Health Care system which includes Brookdale University Hospital, Kingsbrook Jewish, and Interfaith Medical Center is in the heart of Brownsville, in eastern Brooklyn. OBH operates in one of the most economically challenged communities of NYC. Brownsville has consistently held one of the highest poverties and crime rates of any neighborhood in New York City. OBH is a Level 1 Trauma, Designated Stroke and STEMI center. The Emergency Rooms encounter one of the highest incidences of puncture wounds in the State, including a gunshot wound victim every 36 hours (Community Health Needs Assessment, 2018).

The Executive Leadership team consists of Ms. Laray Brown; Chief Executive Officer OBH, Dominick Stanzione, CEO Brookdale University Medical Center, COO OBH, Robert Palermo, CFO OBH. The executive committee of the OBHS Board of Trustees for all three campuses include: Alex Rovt, Ph.D., Board Chairperson, Robert M. Waterman, Board Vice Chairperson, Henna White, Board Secretary/Treasurer. OBH is governed by the Board of Trustees for the regional health system, which also serves as a mirror board for all the hospitals.

The Brooklyn Study was done by Northwell Health to assess community needs. As a result of this study a transformation plan was developed for an integration of the health care system to increase access to quality care throughout Central Brooklyn. The New York State Legislature has authorized the appropriation of \$700 million for the transformation program. This program will bring access and affordability to medical care to each neighborhood.

Appendix C

TARGET:HF™

Discharge Criteria for Patients Hospitalized with Heart Failure

Recommended for all adult patients with heart failure:

- Precipitating and exacerbating factors addressed
- Transition from intravenous to oral diuretic successfully
- Near optimal/ optimal volume status achieved
- Near optimal/ optimal pharmacologic therapy for heart failure
- Stable renal function and electrolytes within normal range/ near normal range based on patient's baseline
- No symptomatic supine or standing hypotension or dizziness
- Patient and family education completed
- Details regarding medications and medication reconciliation
- Need for medication adherence understood by patient/family
- Dietary sodium restriction and understands rationale for adherence

- Need for daily activity and exercise, and under stands rationale for both
- Need for monitoring of daily weights and when to contact provider
- Plan to reassess volume status early after discharge is documented (when/where)
- Plan to monitor electrolytes and renal function early after discharge is documented (what/when)
- Plan to titrate heart failure medications to target dose, if needed, is documented (what/when)
- Plan to reinforce patient and family education post-discharge is documented (when/where/ themes)
- Follow-up clinic visit scheduled within 7 days of hospital discharge is documented (where/when/ with whom)
- Follow-up phone call scheduled in addition to clinic visit is documented (when)
- Referral to outpatient cardiac rehab program

- Oral medication regimen, stable for at least 24 hours
- No intravenous vasodilator or inotropic agent for at least 24 hours
- Ambulation before discharge to assess functional capacity
- Careful observation before and after discharge for worsening, or development of, renal dysfunction, electrolyte abnormalities and symptomatic hypotension
- Plans for more intensive post-discharge management (scale present in home, visiting nurse, or telephone follow-up no longer than 3 days after discharge)
- Referral for formal heart failure disease management

This is a general algorithm to assist in the management of patients. This clinical tool is not intended to replace individual medical judgement or individual patient needs.

Appendix D

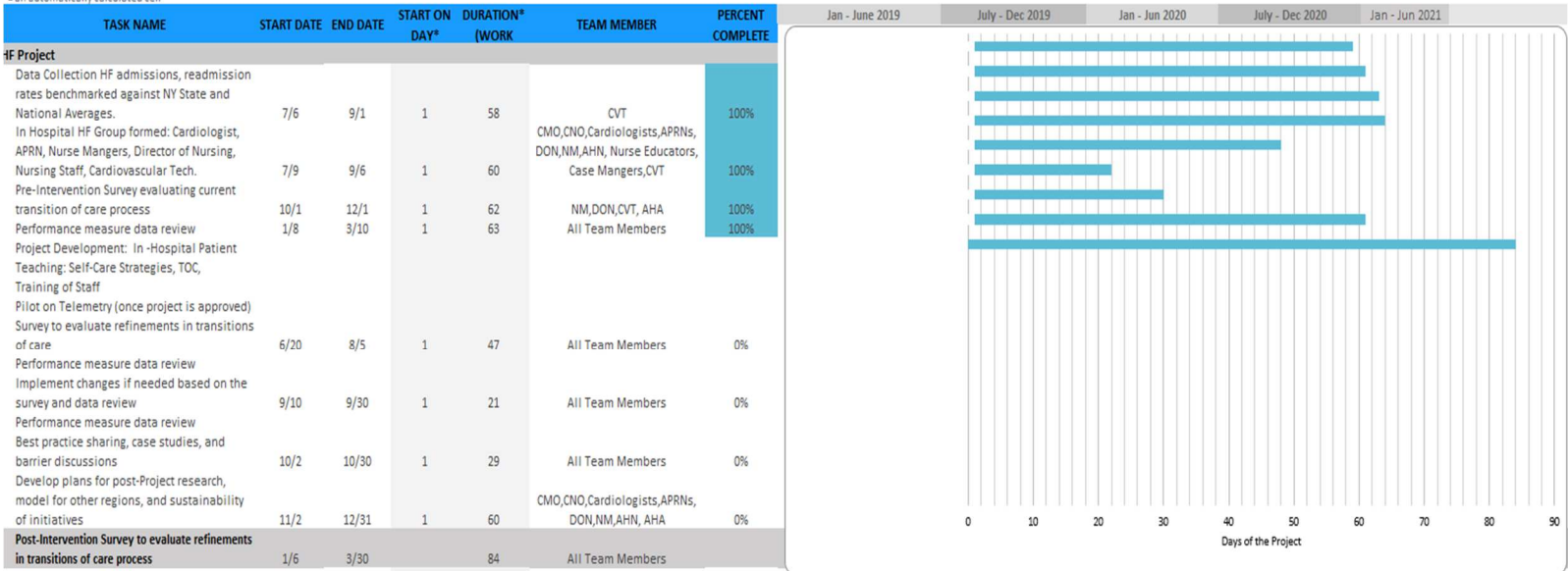
TARGET:HF™

Counseling			
Sodium restricted diet – provide patient with an individualized sodium limitation in “mg” /day			
Fluid restriction (if indicated)			
Monitor weight daily			
What to do if HF symptoms worsen			
Physical activity level and exercise plan			
HF related medications			
Enhanced HF education <small>(at least 60 minutes by trained HF educator)</small>			
Smoking cessation counseling for current or recent smokers (have quit within the last year)			<input type="checkbox"/> NA
ICD/sudden death risk counseling (if indicated)			<input type="checkbox"/> NA
Dietitian/nutritionist interview			
Weight reduction counseling (if indicated)			
Cardiac rehabilitation interview and enrollment (if indicated)			
Need to keep follow-up appointments			
Review of medications (potential side effects, why indicated, need for adherence)			
HF Patient education handout/zones sheet/ booklet			
HF patient discharge contract			
HF interactive workbook, <small>http://www.ksw-gtg.com/aha-heartfailure/</small>			
Referral to heart failure disease management program			

Appendix E

Project Timeline

*=an automatically calculated cell



Appendix F

HF Patient Call Back Sheet

PATIENT NAME-----**TEL**-----

D/C DATE-----**FOLLOW-UP CALL DATE**-----

1. How are you?
2. Are you following your diet?
 - a. Are you having any problems/questions about what to eat?
3. Have you filled your discharge prescriptions?
4. Are you taking your medications?
 - a. Are you taking a “water”/fluid pill?
 - b. Are you having any problems with your medicine?
5. Have you had any:
 - a. Shortness of breath
 - b. Swelling of your feet, ankles, hands or stomach
 - c. Weight gain
 - d. Feeling more tired, no energy
 - e. Dry, hacky cough\
 - f. Feeling uneasy/just “not right”
 - g. New or increased chest pain or pressure
 - h. If yes (to any), what did you do?
6. Was a referral made for a Visiting Nurse to see you?
 - a. If yes, has the nurse visited yet/when is that visit planned?
 - b. Is the nurse reviewing your weight and discussing the signs/symptoms of CHF with you?
7. When do you have an appointment with your doctor?
8. Will you be able to get to your appointment with your doctor or will you need assistance?
9. Have you had any:
 - a. Shortness of breath
 - b. Swelling of your feet, ankles, hands or stomach
 - c. Weight gain
 - d. Feeling more tired, no energy
 - e. Dry, hacky cough
 - f. Feeling uneasy/ just “not right”
 - g. New or increased chest pain or pressure
 - h. If yes (to any), what did you do?
10. Is there anything that you need assistance with right now?

Appendix G



American Heart Association.
Rise Above Heart Failure®

Self-Check Plan

for HF Management



Excellent – Keep Up the Good Work!



No new or worsening shortness of breath



Physical activity level is normal for you



No new swelling, feet and legs look normal for you



Weight check stable
Weight: _____



No sign of chest pain

GREAT! CONTINUE:



Daily Weight Check



Meds as Directed



Low Sodium Eating



Follow-up Visits

Pay Attention – Use Caution!



Dry, hacking cough



Worsening shortness of breath with activity



Increased swelling of legs, feet, and ankles



Sudden weight gain of more than 2-3 lbs in a 24 hour period (or 5 lbs in a week)



Discomfort or swelling in the abdomen



Trouble Sleeping

CHECK IN! Your symptoms may indicate:



A need to contact your doctor or provider.



A need for a change in medications.

Medical Alert – Warning!



Frequent dry, hacking cough



Shortness of breath at rest



Increased discomfort or swelling in the lower body



Sudden weight gain of more than 2-3 lbs in a 24 hour period (or 5 lbs in a week)



New or worsening dizziness, confusion, sadness or depression



Loss of appetite



Increased trouble sleeping; cannot lie flat

WARNING! You need to be evaluated right away.



Call your physician or call **911**

www.RiseAboveHF.org

Supported by